

**February 3, 2015** - ADEQ issued a 401 Certification for the Rosemont Copper Project stating the project will not violate applicable surface water quality standards. (b)(5) Deliberative

#### **401 Certification Summary**

##### **General Conditions:**

ADEQ may request the Corps suspend, modify or revoke the CWA 404 permit if the 401 Cert. has been violated.

##### **Specific Conditions:**

- **Surface Water Mitigation Plan**

This plan proposes to maintain aquatic and riparian resources at pre-project levels in the OAW portions of Davidson Canyon Wash and Lower Cienega Creek. The plan proposes measures to offset predicted reductions in surface water flows and sediment.

- **Stormwater Management**

The applicant will ensure activities will not cause adverse change in stability of any WUS with respect to stream hydraulics, erosion and sediment load downstream of project. If such a change occurs then the applicant will take steps to restore the pre-project stability of any impacted segments.

- **Sediment Loads**

When flow is sufficient to erode, carry or deposit material, certified activities in WUS shall cease until the flow decreases below the point where sediment movement ceases, or control measures have been undertaken.

Silt-laden or turbid water resulting from certified activities shall be settled, filtered or treated to ensure no exceedance of, or reduction from, natural background levels of sediment occurs in any WUS.

#### **Surface Water Mitigation Plan (SWMP) dated December 2104**

##### **Key Elements:**

- **General Monitoring Component:** No monitoring is required under 401 Certification to maintain compliance, but RM proposes to provide ADEQ with the results and analysis conducted under other agency requirements (USFS).
- **Site Specific Data Review and Modeling Component:** This describes the surface water model **to be developed** for the project.
- **Mitigation Component:** The surface water model that will be developed will be used to quantify changed in stormwater flow to Davidson canyon and proactively mitigate or offset those changes, as needed.
- **Reporting Component:** Reports will be prepared quarterly and annually.

##### **Surface Water Model**

- **The surface water model is not yet developed.** (b)(5) Deliberative

[REDACTED]

## Mitigation

- **Water Rights Assessment** – RM will sever and transfer the youngest water right (1935 – 46 afy) at Pantano Dam and transfer it to a state agency. (b)(5) Deliberative
- **Closure of Stock Well in Davidson Canyon Wash** – This is a shallow hand-dug well and is part of the RM grazing allotment. Water is pumped as needed from the well for grazing. RM proposes to close it as mitigation. (b)(5) Deliberative
- **Cessation of Stock Watering at Questa Spring** – Currently, Questa Spring reports directly to a stock tank. RM proposes to close the tank and divert water back to natural system. (b)(5) Deliberative
- **Closure of Stock Ponds and Tanks** – RM proposes to close 6 tanks and 2 ponds and replace them with wells and stock drinkers. (b)(5) Deliberative

## Additional Mitigation Opportunities

- Change in current stormwater management design
- Use of pit dewatering water
- Installation of a well
- Controlling pollutant loading in drainage from causes other than RM

## Sediment Mitigation

- Removal of stock ponds/tanks will allow sediment currently being trapped to enter system
- Potential removal of sediment control structures

**From:** [Goldmann, Elizabeth](#)  
**To:** [Blaine, Marjorie E SPL](#)  
**Subject:** FW: Fwd: where things are  
**Date:** Wednesday, September 10, 2014 12:49:00 PM

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**From:** dbear (b) (6)  
**Sent:** Friday, September 05, 2014 2:40 PM  
**To:** Goldmann, Elizabeth  
**Subject:** Fwd: Fwd: where things are

Entrance and pit access

Entrance at M.P. 44.  
FS 4064 (west) thru Rosemont Ranch  
FS 231 (west) into the pit area  
FS 4059 (west) into pit

At the ranch (staging area)

dozers  
backhoe  
porta-pots  
diesel storage  
water storage  
2 light plants  
1 drilling rig



**From:** [Goldmann, Elizabeth](#)  
**To:** [Blaine, Marjorie E SPL](#)  
**Subject:** FW: Fwd: Fwd: Photos from Sep 2, 2014  
**Date:** Friday, September 05, 2014 3:45:00 PM  
**Attachments:** [ATT00001](#)  
[ATT00002](#)  
[ATT00003](#)  
[ATT00004](#)

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FYI

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**From:** dbear (b) (6)  
**Sent:** Friday, September 05, 2014 2:39 PM  
**To:** Goldmann, Elizabeth  
**Subject:** Fwd: Fwd: Fwd: Photos from Sep 2, 2014

preparation for core drilling (east pit boundary)





first drilling rig arriving @ Rosemont Ranch (Layne Co.- Woodlands, Tx.)



Attachment ATT00001 (133255 Bytes) cannot be converted to PDF format.

Attachment ATT00002 (134793 Bytes) cannot be converted to PDF format.

Attachment ATT00003 (160273 Bytes) cannot be converted to PDF format.

Attachment ATT00004 (102831 Bytes) cannot be converted to PDF format.



**From:** [Goldmann, Elizabeth](#)  
**To:** [Blaine, Marjorie E SPL](#)  
**Subject:** FW: Fwd: Fwd: Photos from Sep 2, 2014  
**Date:** Wednesday, September 10, 2014 12:38:00 PM  
**Attachments:** [ATT00001](#)  
[ATT00002](#)  
[ATT00003](#)  
[ATT00004](#)

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**From:** dbear (b) (6)  
**Sent:** Friday, September 05, 2014 2:39 PM  
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Attachment RM\_1. (133255 Bytes) cannot be converted to PDF format.

Attachment RM\_1. (134793 Bytes) cannot be converted to PDF format.

Attachment RM\_1. (160273 Bytes) cannot be converted to PDF format.

Attachment RM\_1. (102831 Bytes) cannot be converted to PDF format.

**From:** [Goldmann, Elizabeth](#)  
**To:** [Blaine, Marjorie E SPL](#)  
**Subject:** FW: RM  
**Date:** Wednesday, September 10, 2014 1:42:00 PM  
**Attachments:** [Hudbay's Road Use NOI 8-14-14.pdf](#)  
[USFS NOI approval letter 8-22-14.docx](#)

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Hi Marjorie,

One more thought, (b)(5) Deliberative

E.

-----Original Message-----

From: Goldmann, Elizabeth  
Sent: Friday, September 05, 2014 3:45 PM  
To: 'Blaine, Marjorie E SPL'  
Subject: RM

Hi Marjorie

I am not sure if you are aware of approval by USFS for Hudbay exploratory drilling at RM. Today, I received an inquiry from Dinah Bear and I am forwarding to you photos of the site.

Thanks, Elizabeth



August 14, 2014

Coronado National Forest  
300 West Congress  
Tucson, AZ 85701

**Attn: Jim Copeland**

Dear Mr. Copeland:

This serves as HudBay's notice to the Forest Service of our intention to conduct exploration drilling activities on private lands and the use of roads located both on private lands and on lands administered by the Coronado National Forest. Hudbay is proposing a drilling program in the area identified as the Rosemont Open Pit area and drilling will only occur on Rosemont patented mining claims.

#### **Exploration Activities**

The exploration activities that will take place will be completed by six drill rigs operating two shifts a day for approximately three to four months. As stated above, drilling will take place completely on Rosemont patented mining claims. The project will also involve activities such as core logging and core storage at the Rosemont Camp site; however, the Hidden Valley ranch location will also be used for logging as well as core storage. Both of these locations are on private property. All laydown and storage areas will also be located on private property and all water for the project will be pumped from wells located on private property.

As stated, this drilling program will use Forest System roads and roads located private property. August Resource (Arizona) Corporation, which became Rosemont Copper Company, holds a Forest Road Easement. This easement is 100 feet wide and allows access from two exits off of State Route 83, one for Rosemont Junction along Forest Road 231 to the private property parcels at Rosemont Junction and the second from Milepost 44 along Forest Road 4064 to private property and then again to the Rosemont Junction parcels. Not included in this easement is a portion (4,782 feet) of Forest Road 231, a portion (2,352 feet) of Forest Road 4051 and a portion (665 feet) of Forest Road 4059 that provide access to our private properties. The map attached shows the portion of these roads necessary for this drilling program.

#### **Use Notification**

Each drill rig will be staffed with three people, which means that six different pickups will make a round trip to the rig twice each day. In addition, each rig will be visited during the day by geologists and environmental personnel, and possibly safety personnel. The rigs will each have a port-o-john that will be serviced approximately every third day, and fuel will be supplied to the rigs with a small service truck as needed. Each time a rig moves the drilling supplies will be provided to the rig. Total road use for Forest Roads 4051 and 4050 on a daily (24 hour) basis is anticipated to be less than 20 pick up truck trips and 12 water truck trips. Weekly trips over those roads by the port-o-john service pump trucks, and

P.O. Box 35130  
Tucson, Arizona  
USA 85740-5130  
tel 520 495-3500  
fax 520 495-3540  
[hudbayminerals.com](http://hudbayminerals.com)

service/supply vehicles will add approximately 15 trips during a week. The drill rigs will access the site over the roads stated above on a once in and once out basis – over the four-month period.

Prior to the drilling program it will be necessary for Hudbay to create drilling pads and short spur access roads for the drills (all on private, patented claims). This will be accomplished using a combination of equipment such as a grader, dozer, trackhoe, water truck, and backhoe. Incidental equipment will include a bobcat, chipper, water tower, vacuum trailer, and a pickup. The larger equipment will be brought in and then removed from the site – once in and out. Incidental equipment will be used throughout the drilling program and will be staged either in the pit area or at the Rosemont Camp location.

In summary, Hudbay is notifying the Forest Service of its intended road use for mining operations. This use includes:

- 20 pickup trucks daily,
- 12 water trucks daily,
- 15 service trucks weekly, and
- 15 transport vehicles (approximately) – once in and once out.

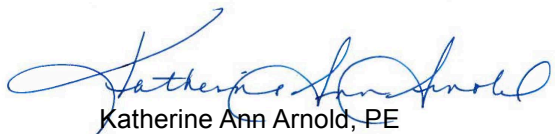
### **Monitoring and Management Activities**

Hudbay plans to have environmental monitoring of all activities to ensure compliance with the AZPDES Stormwater Permit, the Air Quality Control Permit, the DeMinimus Discharge Permit, and other general permits. Hudbay will have an archaeological monitor on-site for all ground disturbing activities and has already reviewed the sites listed in the archaeological surveys to ensure none of the activities are planned within 50 feet of an identified site. Finally, biologists are currently reviewing adits at the site to determine occupancy by bats, yellow-billed cuckoo and other endangered species. These same biologists will be on-hand if activities are to take place in locations identified to contain species of concern.

A signage and an access restriction plan on private property have been developed and security personnel will be on hand to help direct the public to routes around the activities; ensuring there are no safety concerns.

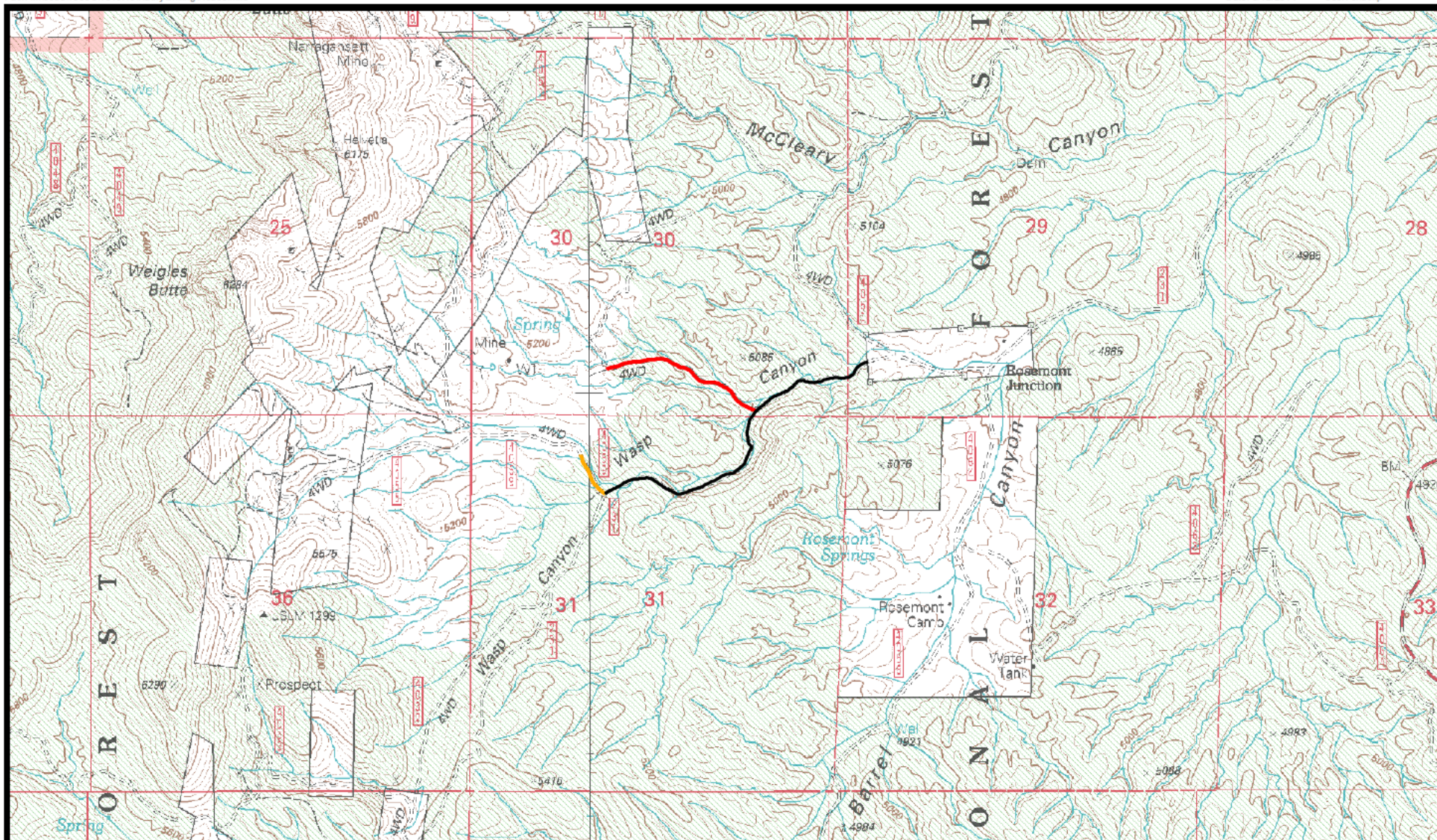
Please let me know if there is additional information that you require.

Sincerely,



Katherine Ann Arnold, PE  
Vice-President, Environmental and Regulatory Affairs

*Doc. No. 033/14-15.3.1*

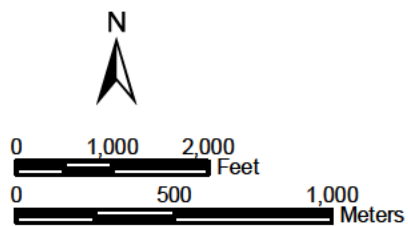


Data Source: BLM & FS  
FS 7.5 Min Quads

### Legend

#### FS Route No#

- 231 (4,782 Ft)
- 4051 (2,352 Ft)
- 4059 (665 Ft)
- FS Lands
- Private Lands (No color)



Rosemont Copper





United States  
Department of  
Agriculture

Forest  
Service

Coronado National Forest  
Nogales Ranger District

303 Old Tucson Road  
Nogales, Arizona 85621  
Phone (520) 281-2296  
FAX (520) 281-2396

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**File Code:** 2810

**Date:** August 22, 2014

Katherine A. Arnold, P.E.  
Vice President, Environmental and Regulatory Affairs  
Hudbay Minerals  
P. O. Box 35130  
Tucson, AZ 85750

Dear Ms. Arnold,

I received your Notice of Intent (NOI) dated August 14, 2014, to conduct mine exploration operations on Hudbay's (formerly Rosemont Copper) private land on the east side of the Santa Rita Mountains. In your NOI, you propose the following incidental mining activities on NFS lands administered by the Nogales Ranger District of the Coronado National Forest (CNF):

- Use of the following existing roads: 4,782 feet of Forest Road 231, 2,352 feet of Forest Road 4051, and 665 feet of Forest Road 4059. The use will consist of 20 pickup truck trips daily, 12 water truck trips daily, 15 service truck trips weekly, and approximately 15 transport vehicle trips once in and once out. Other roads in your proposal are either on private or your company has easements for use.
- A signage and an access restriction plan on private property have been developed and security personnel will be on hand to help direct the public to routes around the activities; ensuring there are no safety concerns.
- Activities will occur during a four month period, likely beginning in September 2014.

After reviewing your NOI for compliance with the requirements of the Forest Service mining regulations at 36 CFR 228, Subpart A, I have determined your proposed activity is not likely to cause a significant disturbance of surface resources. My determination that a Plan of Operations (PoO) is not needed is based on your description of activities, including reclamation.

As a reminder, all users of the Coronado National Forest must abide by the Forest Service rules and regulations including (a) road closures/motorized access restrictions (b) dispersed camping policy, (c) fire restrictions, (d) pack-in, pack-out policy, and (e) the most current district travel management plan (available at this office). Your activities may be subject to other local, state and federal permits and certifications. This notice does not relieve you of your obligations to obtain all other appropriate permits and permission.



If your activities deviate from the methods and conditions outlined in your NOI, you should file another NOI or a PoO with the Forest Service. Please feel free to contact Mindy Vogel, Minerals and Geology Program Manager at the CNF Supervisor's Office (520-388-8327 or [msvogel@fs.fed.us](mailto:msvogel@fs.fed.us)) if you have any questions or need clarification of the above.

Sincerely,

JAMES D. COPELAND  
District Ranger

cc: Mindy S Vogel, Jim Upchurch

**From:** [Goldmann, Elizabeth](#)  
**To:** [Blaine, Marjorie E SPL](#)  
**Cc:** [Leidy, Robert](#)  
**Subject:** FW: Request for Assistance - Site Access at Sonoita Creek and South Sonoita Creek Ranches  
**Date:** Thursday, September 18, 2014 9:45:00 AM  
**Importance:** High

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Hi Marjorie

Please contact Rob as soon as you hear from RM. Rob is taking the lead in coordinating the site visit. If you are too busy, let us know. We can reach out to RM directly.

Thanks!

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**From:** Goldmann, Elizabeth  
**Sent:** Tuesday, September 16, 2014 10:10 AM  
**To:** 'Blaine, Marjorie E SPL'  
**Subject:** Request for Assistance - Site Access at Sonoita Creek and South Sonoita Creek Ranches  
**Importance:** High

Hi Marjorie

EPA is reviewing Rosemont's request for a 404 permit to discharge dredged or fill material into waters of the United States (waters). To offset impacts to waters, Rosemont has proposed mitigation. One component of the mitigation proposal involves the design and construction of ephemeral channels adjacent to Sonoita Creek on the Sonoita Creek and South Sonoita Creek ranches (SCR) Santa Cruz County, AZ.

(b)(5) Deliberative

A large rectangular area of the document is redacted with a solid black box. The text "(b)(5) Deliberative" is written in red at the top left of this redacted area.

EPA is requesting your assistance in scheduling site access from **October 3 -5, 2014**. Dr. Robert Leidy, Dr. Matt Kondolf, UC Berkeley, and James Ashby, PG Environmental, will conduct the site visit.

(b)(5) Deliberative

A rectangular area of the document is redacted with a solid black box. The text "(b)(5) Deliberative" is written in red at the top left of this redacted area.

Thank you for your assistance. Please let us know if you would like us to contact Rosemont directly regarding site access.

Sincerely,

Elizabeth



**From:** [Goldmann, Elizabeth](#)  
**To:** [Blaine, Marjorie E SPL](#)  
**Subject:** FYI...  
**Date:** Wednesday, November 26, 2014 11:53:00 AM

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Hi Marjorie

(b)(5) Deliberative [REDACTED]  
[REDACTED] 5)  
[REDACTED] Deliberative  
[REDACTED]  
[REDACTED]  
[REDACTED]  
[REDACTED]  
[REDACTED]

Thanks, Elizabeth

**From:** [Goldmann, Elizabeth](#)  
**To:** [Blaine, Marjorie E SPL](#)  
**Subject:** RE: Draft BLM Rosemont MOU within Cienega Creek National Conservation Area (UNCLASSIFIED)  
**Date:** Wednesday, June 04, 2014 11:29:00 AM

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Thank you for conveying our position to RM.

-Elizabeth

-----Original Message-----

From: Blaine, Marjorie E SPL [<mailto:Marjorie.E.Blaine@usace.army.mil>]  
Sent: Wednesday, June 04, 2014 11:14 AM  
To: Jamie Sturgess  
Cc: Goldmann, Elizabeth  
Subject: RE: Draft BLM Rosemont MOU within Cienega Creek National Conservation Area (UNCLASSIFIED)

Classification: UNCLASSIFIED  
Caveats: NONE

Jamie

The Corps and EPA have been very clear about our position regarding voluntary measures that Rosemont may develop with BLM or AGFD. Any measures BLM chooses to develop with RM is done at BLM's risk because such measures are not enforceable.

Marjorie

Assist us in better serving you.

You are invited to complete our customer survey, located at the following link:

[http://corpsmapu.usace.army.mil/cm\\_apex/f?p=regulatory\\_survey](http://corpsmapu.usace.army.mil/cm_apex/f?p=regulatory_survey)

-----Original Message-----

From: Jamie Sturgess [<mailto:jsturgess@rosemontcopper.com>]  
Sent: Wednesday, June 04, 2014 4:16 AM  
To: Blaine, Marjorie E SPL  
Cc: Kathy Arnold; Patrick Cunningham  
Subject: [EXTERNAL] Draft BLM Rosemont MOU within Cienega Creek National Conservation Area

Marjorie:

This is for our discussion today on Rosemont Mitigation Proposal.

It is still in draft, as we work through the process.

Jamie Sturgess

Classification: UNCLASSIFIED  
Caveats: NONE



**From:** [Goldmann, Elizabeth](#)  
**To:** [Blaine, Marjorie E SPL](#)  
**Cc:** [Leidy, Robert](#)  
**Subject:** RE: FW: [EXTERNAL] Request for Assistance - Site Access at Sonoita Creek and Sonoita Creek Ranches: October 31 - November 2, 2014 (UNCLASSIFIED)  
**Date:** Monday, October 06, 2014 9:37:00 AM

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Thanks Marjorie. We agree it is necessary to have site access to all parcels. Rob has been in contact with our contractor. We will be providing RM and the Corps with a confirmation of the dates (we may move it back one day), a proposed field schedule, and a request for full site access.

- Elizabeth



**From:** [Goldmann, Elizabeth](#)  
**To:** [Blaine, Marjorie E SPL](#); [Castanon, David J SPL](#)  
**Subject:** RM  
**Date:** Monday, August 04, 2014 9:04:00 AM  
**Attachments:** [ss.cc.lm-cienega creek preserve sustainability.pdf](#)

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Hi Marjorie and Dave

I have attached a copy of a July 28, 2014 Pima County memo from Chuck Huckelberry to Suzanne Shields, Chris Cawein and Linda Mayo. I am not sure if you have seen it.

-Elizabeth




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# MEMORANDUM

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Date: July 28, 2014

To: Suzanne Shields, Director  
Regional Flood Control District

From: C.H. Huckelberry  
County Administrator 

Chris Cawein, Director  
Natural Resources, Parks and Recreation

Linda Mayro, Director  
Office of Sustainability and Conservation

Re: **Risk Assessment of the Sustainability of the Cienega Creek Natural Preserve Introduction**

The County has invested over \$64 million in protecting our Cienega Creek natural resource assets including ecosystems, rare riparian environments of the Sonoran Desert, endangered fish species as well as unique and rich cultural assets. Our protection of Cienega Creek began 35 years ago. This investment, of time and money, in the natural system that sustains these resources is under threat. A variety of options have been discussed and postulated regarding protection of these assets, all of which are unproven and untested.

The purpose of this memorandum is to direct you and your staff to compile a risk assessment associated with the sustainability of the Cienega Creek Natural Preserve, as well as to develop the most appropriate conservation strategy to reduce or eliminate threats to its sustainability.

## Summary of Ecosystem Assets and Potential Threats

The Cienega Creek Natural Preserve is home to at least five threatened and endangered species (lesser long-nosed bat, yellow-billed cuckoo, Gila topminnow, Gila chub, and Mexican garter snake) and numerous other riparian and aquatic obligate species that may be listed in the future. This abundance is largely the result of Cienega Creek, which is designated as an Arizona Outstanding Water. Yet the creek's decline in recent years is clearly evident, mesquite and cottonwood trees are dying and wetlands have declined significantly. This is because of a decline in all key measures of the creek's water: water volume, extent of stream flow, and depth to water in wells. As a result of these changes, habitats for aquatic and mesic-riparian species in the Preserve are decreasing in size and quality.

### Characterization of Resource Sustainability Threats

As threats increase, habitat extent and quality declines, variability increases, and a system is more susceptible to threats, even minor ones that would not otherwise have impacted the system. All possible threats to the sustainability of ecosystem functions at Cienega Creek Natural Preserve should be considered by your respective professional staff. It would appear that while the Rosemont mining proposal is obviously the most visible threat at this moment, there are other significant threats that must be considered such as the proliferation of development (wildcat or regulated) in the vicinity of the Cienega Creek Preserve. Any individual or planned development relying on domestic water wells for water supply or water supply production wells of regulated utilities all pose a significant risk to the natural water resources and ecosystem functions of Cienega Creek. Other mining activities may also threaten the riparian resources of the Cienega Creek Natural Preserve as well as Davidson Canyon. Those specifically related to marble or calcite quarries that are regulated and permitted by either the State Land Department or the State Mining Inspector may be equally detrimental to our resource assets. The attached graphic on Cienega Creek wells demonstrates the scope of the problem.

### Little Previous Help from Federal Regulators

Based on our immediate past experience with some federal agencies, it is clear the County cannot rely on them for assistance in protecting these assets. We are being overrun with electric and natural gas energy corridor proposals as well as mining proposals that clearly are counter to our conservation standards and objectives. Hence, there is the need to develop an appropriate strategy or plan to minimize or eliminate the risks or threats to the sustainability of the natural resources within Cienega Creek or at least dimension the actions and cost necessary to do so and evaluate options that may be viable to sustain these important natural ecosystems and cultural resources of Pima County.

### The Pantano Dam In-Lieu Fee Option

Third party conversations repeated by federal regulators, project proponents of the Rosemont Mine and others regarding what the County will or will not do regarding a proposed Pantano Dam In-Lieu Fee (ILF) program have been counterproductive and unacceptable. I am also very concerned about how our position continues to be misrepresented without direct conversations with the County. My December 30, 2013 letter to the District Engineer of the US Army Corps of Engineers Los Angeles District was clear on the subject. We will certainly discuss well thought out proposals to consider alternative approaches or other options that may be proffered, but the rampant speculation of what the County will or will not do is extraordinarily counterproductive and only confuses and confounds any future consideration of this option. Therefore, I will not entertain any further discussion regarding this particular in-lieu fee project until after the risk assessment that I have requested from you has been completed. As a worst case scenario, it may conclude that the only way to sustain the natural resource assets of the Cienega Creek in the long run is to import treated and renewable water resources.

Suzanne Shields, Chris Cawein and Linda Mayro

Re: **Risk Assessment of the Sustainability of the Cienega Creek Natural Preserve Introduction**

July 28, 2014

Page 3

Cultural Resources should also be Evaluated for Direct Protection

Cienega Creek encompasses a cultural landscape of great antiquity that lies between the Tucson Basin and the San Pedro River Valley. The year-round presence of water has drawn people to Cienega Creek from the earliest periods of human occupations in southern Arizona. Evidence of past habitation and exploitation can be seen throughout the landscape, which has been occupied and used by humans for more than 12,000 years, from the end of the last Ice Age to modern times.

The vast number of prehistoric and historic cultural resources found within the Cienega valley attest to the importance of this area to the human population and the critical importance of its preservation. Management of the Cienega valley should be geared to protect these resources and continue building on our knowledge about the past.

Summary

Please prepare the requested risk assessment. No further discussion of new proposals from any source or interest on the Pantano Dam ILF will be considered until this risk assessment has been completed. The assessment is to develop the best regulatory, acquisition and possible intervention strategies to protect the actual resources of Cienega Creek.

CHH/anc

c: The Honorable Chair and Members, Pima County Board of Supervisors  
John Bernal, Deputy County Administrator for Public Works



**From:** [Goldmann, Elizabeth](#)  
**To:** [Blaine, Marjorie E SPL](#)  
**Subject:** RM  
**Date:** Friday, September 05, 2014 3:44:00 PM  
**Attachments:** [Hudbay's Road Use NOI 8-14-14.pdf](#)  
[USFS NOI approval letter 8-22-14.docx](#)

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Hi Marjorie

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August 14, 2014

Coronado National Forest  
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**Attn: Jim Copeland**

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#### **Exploration Activities**

The exploration activities that will take place will be completed by six drill rigs operating two shifts a day for approximately three to four months. As stated above, drilling will take place completely on Rosemont patented mining claims. The project will also involve activities such as core logging and core storage at the Rosemont Camp site; however, the Hidden Valley ranch location will also be used for logging as well as core storage. Both of these locations are on private property. All laydown and storage areas will also be located on private property and all water for the project will be pumped from wells located on private property.

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service/supply vehicles will add approximately 15 trips during a week. The drill rigs will access the site over the roads stated above on a once in and once out basis – over the four-month period.

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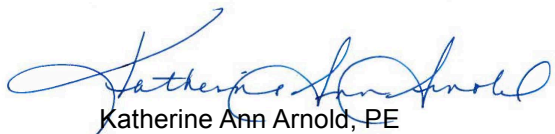
### **Monitoring and Management Activities**

Hudbay plans to have environmental monitoring of all activities to ensure compliance with the AZPDES Stormwater Permit, the Air Quality Control Permit, the DeMinimus Discharge Permit, and other general permits. Hudbay will have an archaeological monitor on-site for all ground disturbing activities and has already reviewed the sites listed in the archaeological surveys to ensure none of the activities are planned within 50 feet of an identified site. Finally, biologists are currently reviewing adits at the site to determine occupancy by bats, yellow-billed cuckoo and other endangered species. These same biologists will be on-hand if activities are to take place in locations identified to contain species of concern.

A signage and an access restriction plan on private property have been developed and security personnel will be on hand to help direct the public to routes around the activities; ensuring there are no safety concerns.

Please let me know if there is additional information that you require.

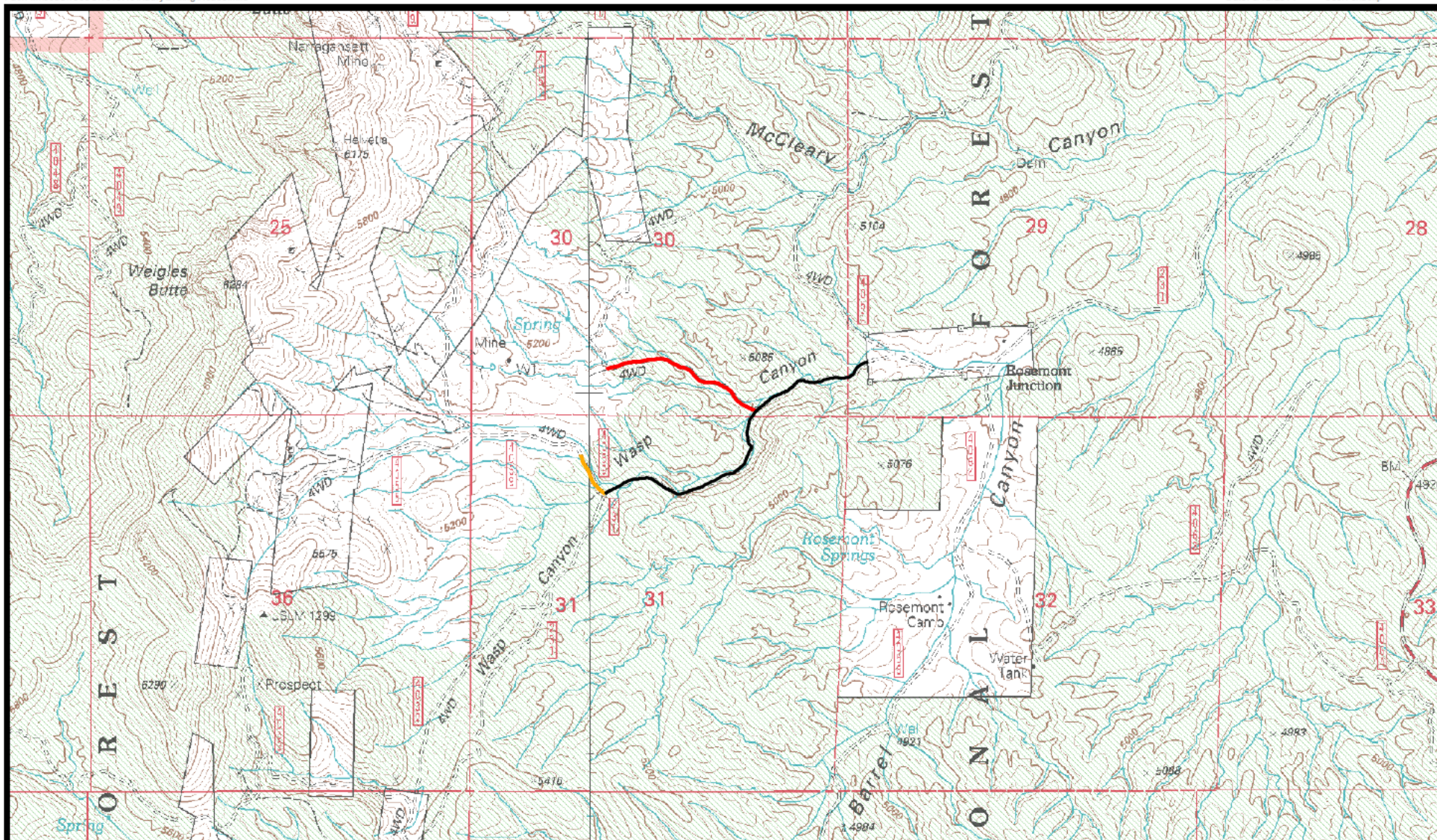
Sincerely,



Katherine Ann Arnold, PE  
Vice-President, Environmental and Regulatory Affairs

*Doc. No. 033/14-15.3.1*





Data Source: BLM & FS  
FS 7,5 Min Quads

### Legend

#### FS Route No#

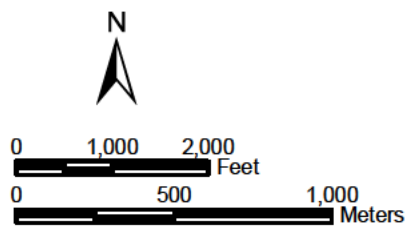
— 231 (4,782 Ft)

— 4051 (2,352 Ft)

— 4059 (665 Ft)

FS Lands

Private Lands (No color)



Rosemont Copper



United States  
Department of  
Agriculture

Forest  
Service

Coronado National Forest  
Nogales Ranger District

303 Old Tucson Road  
Nogales, Arizona 85621  
Phone (520) 281-2296  
FAX (520) 281-2396

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**File Code:** 2810

**Date:** August 22, 2014

Katherine A. Arnold, P.E.  
Vice President, Environmental and Regulatory Affairs  
Hudbay Minerals  
P. O. Box 35130  
Tucson, AZ 85750

Dear Ms. Arnold,

I received your Notice of Intent (NOI) dated August 14, 2014, to conduct mine exploration operations on Hudbay's (formerly Rosemont Copper) private land on the east side of the Santa Rita Mountains. In your NOI, you propose the following incidental mining activities on NFS lands administered by the Nogales Ranger District of the Coronado National Forest (CNF):

- Use of the following existing roads: 4,782 feet of Forest Road 231, 2,352 feet of Forest Road 4051, and 665 feet of Forest Road 4059. The use will consist of 20 pickup truck trips daily, 12 water truck trips daily, 15 service truck trips weekly, and approximately 15 transport vehicle trips once in and once out. Other roads in your proposal are either on private or your company has easements for use.
- A signage and an access restriction plan on private property have been developed and security personnel will be on hand to help direct the public to routes around the activities; ensuring there are no safety concerns.
- Activities will occur during a four month period, likely beginning in September 2014.

After reviewing your NOI for compliance with the requirements of the Forest Service mining regulations at 36 CFR 228, Subpart A, I have determined your proposed activity is not likely to cause a significant disturbance of surface resources. My determination that a Plan of Operations (PoO) is not needed is based on your description of activities, including reclamation.

As a reminder, all users of the Coronado National Forest must abide by the Forest Service rules and regulations including (a) road closures/motorized access restrictions (b) dispersed camping policy, (c) fire restrictions, (d) pack-in, pack-out policy, and (e) the most current district travel management plan (available at this office). Your activities may be subject to other local, state and federal permits and certifications. This notice does not relieve you of your obligations to obtain all other appropriate permits and permission.



If your activities deviate from the methods and conditions outlined in your NOI, you should file another NOI or a PoO with the Forest Service. Please feel free to contact Mindy Vogel, Minerals and Geology Program Manager at the CNF Supervisor's Office (520-388-8327 or [msvogel@fs.fed.us](mailto:msvogel@fs.fed.us)) if you have any questions or need clarification of the above.

Sincerely,

JAMES D. COPELAND  
District Ranger

cc: Mindy S Vogel, Jim Upchurch

**From:** [Goldmann, Elizabeth](#)  
**To:** [Blaine, Marjorie E SPL](#)  
**Cc:** [Leidy, Robert](#)  
**Subject:** Request for Assistance - Site Access at Sonoita Creek and Sonoita Creek Ranches: October 31 - November 2, 2014  
**Date:** Tuesday, September 30, 2014 1:42:00 PM  
**Importance:** High

---

Hi Marjorie

EPA is reviewing Rosemont's request for a 404 permit to discharge dredged or fill material into waters of the United States (waters). To offset impacts to waters, Rosemont has proposed mitigation. One component of the mitigation proposal involves the design and construction of ephemeral channels adjacent to Sonoita Creek on the Sonoita Creek and South Sonoita Creek ranches (SCR) Santa Cruz County, AZ.

(b)(5) Deliberative

A large rectangular area of the document is redacted with a solid black box. The text "(b)(5) Deliberative" is visible at the top left of this redacted area.

EPA is requesting your assistance in scheduling site access from **October 31 – November 2, 2014**. Dr. Robert Leidy, Dr. Matt Kondolf, UC Berkeley, and James Ashby, PG Environmental, will conduct the site visit.

It (b)(5) Deliberative

A rectangular area of the document is redacted with a solid black box. The text "It (b)(5) Deliberative" is visible at the top left of this redacted area.

Thank you for your assistance. Due to scheduling challenges, we appreciate your help in reaching out to Rosemont as soon as possible. Please let us know if you would like us to contact Rosemont directly regarding site access.

Sincerely,

Elizabeth

**From:** [Goldmann, Elizabeth](#)  
**To:** [David.J.Castonon@usace.army.mil](mailto:David.J.Castonon@usace.army.mil); [Blaine, Marjorie E SPL](#); [Diebolt, Sallie SPL](#)  
**Subject:** "Other Water Quality Aspects" of permit issuance for Rosemont mine in light of state actions under section 401 CWA  
**Date:** Thursday, April 16, 2015 10:33:00 AM  
**Attachments:** [Letter to Colonel Kim Colloton.pdf](#)

---

Dear Dave, Sallie and Marjorie,

Please see the attached letter from Jared Blumenfeld, Regional Administrator, to Colonel Kim Colloton, District Engineer, regarding the proposed Rosemont copper mine. Please contact me if you have any questions.

Best,

Elizabeth





UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

REGION IX

75 Hawthorne Street  
San Francisco, CA 94105-3901

APR 14 2015

OFFICE OF THE  
REGIONAL ADMINISTRATOR

Colonel Kim Colloton  
District Engineer, Los Angeles District  
U.S. Army Corps of Engineers  
P.O. Box 532711  
Los Angeles, California 90053-2325

Subject: "Other Water Quality Aspects" of permit issuance for the Rosemont Mine in light of state actions under §401 of the Clean Water Act

Dear Colonel Colloton:

On February 3, 2015, the Arizona Department of Environmental Quality (ADEQ) issued the Clean Water Act (CWA) §401 Water Quality Certification (certification) for the proposed Rosemont Copper Project (Rosemont mine) in Pima County, Arizona. After careful review and consultation with the state, EPA has determined that the impacts of the project include substantial water quality aspects which may be outside the scope of the state's §401 certification review. Thus, EPA believes the certification alone is unlikely to provide sufficient measures to safeguard the water quality of the Cienega Creek watershed, including stream reaches meeting or exceeding existing water quality standards under CWA §303 (these CWA "Tier 3" waters in Arizona are designated "Outstanding Arizona Waters" or OAW).<sup>1</sup> As prescribed under Corps regulations at 33 CFR 320.4(d), I am requesting your consideration of these "other water quality aspects" when making your §404 CWA permit decision.<sup>2</sup>

The Rosemont Copper Project Final Environmental Impact Statement (FEIS) and other documentation concluded the Rosemont mine, if constructed, would adversely modify surface and groundwater hydrology, sediment transport, and pollutant loadings in the watershed. The state CWA §401 certification lacks sufficient, specific preventative actions to avoid these adverse impacts to water quality, creating a substantial risk to designated beneficial use standards set by the state for Davidson Canyon and Cienega Creek. In general, the certification relies upon limited, voluntary (i.e., non-enforceable) post-discharge monitoring that may detect water quality degradation after it occurs, and includes insubstantial corrective actions to be developed at a later time. Many of EPA's concerns identified in comments on the state's February 21, 2014 draft certification (letter attached) remain unaddressed by the final certification. Among the most critical water quality aspects that remain outstanding are:

1. **Water quality impact avoidance:** Without reasonable assurance of impact avoidance, the available information suggests Tier 3 antidegradation standards are very likely to be violated.

<sup>1</sup>Federal antidegradation policy prohibits any degradation of Tier 3 waters, regardless of economic or social development needs (40 CFR 131.2(a)). Arizona's anti degradation rules reinforce this prohibition (ACC R18-11-107).

<sup>2</sup> Corps Regulatory Guidance Letter 90-04 and the Memorandum for *Major Subordinate Commands and District Commands* dated October 29, 2009



2. **Water quality impact minimization:** A specific and complete monitoring program is necessary at the outset ensure rapid detection of impacts should a robust preventative program fail, and provide for the ability to deploy corrective measures;
3. **Water quality impact mitigation:** Specification of, and enforceable commitment to, available and sufficient corrective measures are needed to offset mine-related reduction of assimilative capacity, changes in downstream sediment yield, and other potential diminutions of water quality that may be detected. Presently, the corrective measures proposed in a “Surface Water Mitigation Plan” lack specificity regarding their ability to arrest and reverse water quality problems once water quality degradation of OAWs or other waters has been detected.<sup>3</sup>

We believe these water quality aspects are directly relevant to several of the Corps’ findings necessary for a permit decision, under both the 404(b)(1) Guidelines and Public Interest Review. The state’s inclusion of general and specific conditions in the certification are highly unlikely to avoid potential water quality degradation, detect anticipated or unanticipated degradation, or mitigate for those impacts. The project’s projected groundwater drawdown and flow and sediment reductions in Davidson Canyon and Cienega Creek have yet to be adequately addressed. These outcomes would represent a failure to maintain and protect existing water quality in those OAWs in violation of the CWA antidegradation policy. The certified discharges of fill material would thus contribute to violation of applicable water quality standards, in conflict with the Guidelines at 40 CFR 230.10(b).

The Corps’ permit decision also includes an evaluation of the impacts of the proposed project on water supply and conservation (33 CFR 320.4). Within the Tucson Active Management Area (AMA), a population of over 811,000 obtains 69% of its municipal water supplies from groundwater. Agriculture relies on subsurface supply to provide 70% of its water.<sup>4</sup> The Upper Santa Cruz subbasin, where Rosemont is sited, provides 20% of the groundwater recharge in the Tucson AMA.<sup>5</sup> The mine’s water needs would represent a new demand that increases pumping by 6-7% during an overall drying trend.<sup>6</sup> Drought, climate change, and the significant uncertainty regarding the potential to successfully recharge subsurface supplies, only heighten EPA’s concerns over Rosemont mine’s projected water use in an aquifer already subject to groundwater overdraft.<sup>7</sup>

According to the FEIS, groundwater pumping for the mining operation and drawdown from the open pit will adversely impact public and private water supplies.<sup>8</sup> As a result of pumping groundwater for the mine, an estimated 500-550 private and municipal wells would be impacted by drawdown in groundwater levels over ten feet.<sup>9</sup> Groundwater drawdown from the mine’s pit within the Davidson Canyon/Cienega Basin, would impact an additional estimated 360-370 well owners with water level

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<sup>3</sup>The SWMP developed under the certification does not meet its stated objective of describing mitigation commitments to offset predicted reductions in surface water flows and sediment yield. For example, it proposes a conceptual mitigation water supply of insufficient quantity to offset flow reductions predicted by the FEIS, and provides no assurance of that water’s future availability.

<sup>4</sup> [www.azwater.gov/azdwr/StatewidePlanning/WaterAtlas/ActiveManagementAreas/Volume\\_8/final.pdf](http://www.azwater.gov/azdwr/StatewidePlanning/WaterAtlas/ActiveManagementAreas/Volume_8/final.pdf).

<sup>5</sup>Letter to Jared Blumenfeld, EPA Regional Administrator, and Colonel Kim Colloton, Corps District Engineer, from Ray Carol, Pima County Supervisor dated November 18, 2014.

<sup>6</sup> FEIS, p. 338.

<sup>7</sup> FEIS, p. 322 and p. 328.

<sup>8</sup> FEIS, pp. 328-329.

<sup>9</sup> FEIS, p. 330 and Table 58, p. 337. Groundwater drawdown is estimated at up to 90 feet adjacent mine site pumping, and up to 10 feet within an approximately 3-4 mile radius (42 square miles).



declines ranging from 15-85 feet.<sup>10</sup> Private and public well owners and suppliers have expressed concern regarding the impact on the quality and quantity of their water supply, as well as the increased costs associated with pumping from a deeper aquifer if the mine is constructed.<sup>11</sup> Rosemont mine proposes to conduct groundwater recharge as a voluntary measure, but the location and effectiveness of recharge is unknown and, therefore, may not benefit the Upper Santa Cruz subbasin.<sup>12</sup>

Finally, the Cienega Creek watershed is located in a near pristine landscape rich in biodiversity. As such, it is an important location for outdoor recreation. The State of Arizona has designated reaches of both Davidson Canyon and Cienega Creek as OAWs due to, among other factors, their exceptional ecological and recreational significance and the presence of federally endangered and threatened species. Water quality in these reaches currently meets or exceeds applicable water quality standards, and any lowering of water quality in OAWs is prohibited. Public and private utilization of this habitat contributes to a robust recreation and tourism industry in the region.<sup>13</sup> Loss of recreational and aesthetic value stemming from the mine's various adverse impacts to water quality are an important additional consideration in permit authorization (33 CFR 320.4).

In summary, sufficient evidence exists to conclude that several water quality aspects that may be beyond the scope of the state's §401 water quality certification remain outstanding, which EPA recommends be considered in your findings under the §404(b)(1) Guidelines and Public Interest Review. Please do not hesitate to contact me with any questions, or have your Regulatory Division Chief contact Jason Brush, our Wetlands Section Supervisor, at (415) 972-3483.

Sincerely,



Jared Blumenfeld

Enclosure: EPA letter to ADEQ dated April 7, 2014

cc: Jim Upchurch, U.S. Forest Service  
Steve Spangle, U.S. Fish and Wildlife Service  
Ray Suazo, Bureau of Land Management  
Trevor Baggione, Arizona Department of Environmental Quality

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<sup>10</sup> FEIS, p. 350.

<sup>11</sup> Letter to Jared Blumenfeld, EPA Regional Administrator and Colonel Kim Colloton, Corps District Engineer dated November 12, 2014 signed by 76 private well owners and public water suppliers and users.

<sup>12</sup> FEIS, pp. 360-361. In addition, Rosemont Mine offered a legally binding residential well protection plan valid during the operation of the mine, but not all well owners have agreed to sign the agreement.

<sup>13</sup> \$2.95 billion is spent annually for tourism and outdoor recreational activities in Pima and Santa Cruz Counties. An analysis by Sonoran Institute estimates a one percent reduction of travel and tourism-related spending in the region would result in an economic loss greater than the entire annual payroll of the mine. J.E. Marlow. 2007. *Mining's Potential Economic Impacts in the Santa Rita and Patagonia Mountains Region of Southeastern Arizona*. Sonoran Institute Study.





UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

REGION IX

75 Hawthorne Street  
San Francisco, CA 94105-3901

APR 07 2014

Michael Fulton, Water Quality Division Director  
Arizona Department of Environmental Quality  
Surface Water Section/State 401 Certification/MS 5415A-1  
1110 West Washington Street  
Phoenix, Arizona 85007

Subject: State of Arizona Clean Water Act (CWA) Draft Section 401 Water Quality Certification for  
the Rosemont Copper Project, Pima County, Arizona

Dear Mr. Fulton:

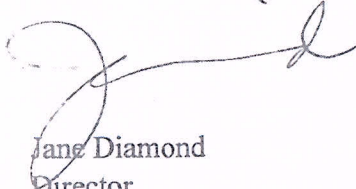
Thank you for the extended opportunity to review the draft CWA Section 401 water quality certification (certification) and supporting information for discharges associated with the proposed Rosemont Copper Project. With Arizona's designation of portions of the Cienega Creek watershed as "Outstanding Arizona Waters" (OAWs), the EPA supports the state's broadest exercise of legal discretion to protect these remarkable resources. We are submitting the enclosed comments as a continuation of our interagency coordination on the mine's potential water quality consequences to the OAWs of the Cienega Creek watershed.

After careful consideration, EPA believes the draft certification and supporting information provide an insufficient basis from which to conclude existing water quality will be maintained (*e.g.*, ongoing attainment of designated beneficial uses). In general, the draft certification relies on lagging indicators (post-discharge monitoring) to trigger corrective actions, rather than a preventative approach to ensure the protection of water quality in the OAWs. Those corrective actions also lack critical specificity with regard to water supply, the ability to arrest and reverse water quality problems should they be detected, and the enforceability of conditions given varying jurisdiction over proposed monitoring areas.

The U.S. Forest Service's Final Environmental Impact Statement (FEIS) and supporting documentation conclude that the Rosemont Copper Project will adversely modify surface and groundwater hydrology, sediment transport, and pollutant loadings in the watershed. EPA believes the available evidence indicates a substantial risk to designated beneficial use standards (*e.g.*, fish, wildlife and habitat) set by the state for Davidson Canyon and Cienega Creek. The EPA recommends that no 401 certification be issued unless the discharger can implement specific preventative actions that provide a high degree of confidence that designated uses will be maintained.

Please do not hesitate to contact me with any questions or concerns you may have regarding the enclosed comments at (415) 947-8707.

Sincerely,

A handwritten signature in dark ink, appearing to read 'Jane Diamond', with a large, stylized loop at the beginning and a horizontal stroke extending to the right.

Jane Diamond  
Director  
Water Division

cc: Jim Upchurch, U.S. Forest Service  
Colonel Kimberly Colloton, U.S. Army Corps of Engineers  
Jean Calhoun, U.S. Fish and Wildlife Service  
Ray Suazo, Bureau of Land Management  
Chuck Huckelberry, Pima County



**EPA Region 9 comments on the *Draft Section 401 Water Quality Certification for the Rosemont Copper Project* dated February 21, 2014 (Draft 401 Certification), and the *Basis for State 401 Certification Decision Rosemont Copper Project ACOE Application* No. SPL-2008-00816-MB (Basis for Decision)**

**Protecting “Outstanding” Water Quality Downstream of the Rosemont Mine**

The State of Arizona has designated reaches of both Davidson Canyon and Cienega Creek as OAWs due to, among other factors, their exceptional ecological and recreational significance and the presence of federally endangered and threatened species. Water quality in these reaches currently meets or exceeds applicable water quality standards, and any lowering of water quality in OAWs is prohibited.

ADEQ states in its Basis for Decision that, “In order to issue a State 401 water quality certification, ADEQ must be satisfied that any modifications to hydrology, sediment transport or water quality, as a result of the proposed activities under the § 404 permit, will not result in adverse water quality impacts to the downstream OAWs.”<sup>1</sup>

Rosemont Mine proposes no direct discharges to OAWs. However, as ADEQ acknowledges in its Basis for Decision, “As part of its certification process, ADEQ may impose additional controls, conditions or mitigation measures, on indirect discharges that occur upstream of or to tributaries of an OAW to maintain and protect existing water quality in a downstream OAW.”<sup>2</sup>

ADEQ has proposed the following additional measures in its Draft 401 Certification to maintain and protect existing water quality in Davidson Canyon and Cienega Creek:

**5.2 Specific Conditions**

- 1) Within 180 days of the effective date of the CWA 404 permit, the applicant shall submit to ADEQ, for review and approval, a surface water mitigation program designed to maintain aquatic and riparian resources at pre-project levels in Davidson Canyon and Lower Cienega Creek. The program shall include, but is not limited to, a description of measures that will be taken to offset predicted reductions in surface water flow, in response to the project, along with a proposed schedule for implementation. The Final Environmental Impact Statement (FEIS) predicts a 17.2% reduction in average annual post-closure stormwater runoff volume as a result of the proposed activities. The surface water mitigation program shall describe measures that will offset the reduced runoff volume should it occur. The draft mitigation program shall be submitted to the address and contact person in Section 4.0.

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<sup>1</sup> Basis for Decision at pg. 2.

<sup>2</sup> Basis for Decision at pg. 2; *see also* ADEQ Draft Antidegradation Implementation Procedures (April 2008) at pg. 4 (“ADEQ will impose whatever controls are necessary on indirect discharges that occur upstream of or to tributaries of an OAW to maintain and protect existing water quality in a downstream OAW.”) Available at: [http://www.azdeq.gov/enviro/water/standards/download/draft\\_anti.pdf](http://www.azdeq.gov/enviro/water/standards/download/draft_anti.pdf).



The mitigation program shall identify measures, as necessary, to ensure that any water used to mitigate a predicted reduction in stream flows, meets applicable Arizona surface water quality standards, including for Outstanding Arizona Waters, where applicable.

Within 30 days of ADEQ approval of the program, the applicant shall implement the approved mitigation program in accordance with the schedule set forth in the approved program. Should the results of required monitoring and/or revised hydrologic modeling (FEIS Mitigation Measures FS-BR-22, FS-BR-27, FS-GW-02, FS-SR-05) indicate that water quality in Davidson Canyon or Lower Cienega Creek is adversely affected by the activities certified herein, ADEQ may request that the COE suspend the CWA 404 Permit and require additional mitigation.

ADEQ found that if Rosemont adheres to the conditions and mitigation in the 401 Certification (*i.e.*, Specific Conditions 5.2), and also to CWA § 404 permit conditions, the U.S. Forest Service's Final Environmental Impact Statement's (FEIS) mitigation measures, and the State's 2010 Mining AZPDES Multi Sector General Permit's requirements, then the Rosemont Copper Project should not cause or contribute to exceedences of surface water quality standards nor cause water quality degradation in the downstream receiving waters including Davidson Canyon Wash and Cienega Creek.<sup>3</sup> ADEQ based its finding on a consideration of the following 5 factors:

1. Change in ambient concentrations predicted at the appropriate critical flow conditions and the nature, persistence and potential effects of the parameter;
2. Changes in loadings and the nature, persistence and potential effects of the parameter;
3. Reduction in available assimilative capacity;
4. Degree of confidence in the various components of any modeling technique utilized; and
5. Potential for cumulative effects.

After a careful review of ADEQ's consideration of these five factors, EPA believes ADEQ's certification decision, and its finding that the current conditions and mitigation in the 401 certification (*i.e.*, Specific Conditions 5.2) will prevent water quality degradation in Davidson Wash and Cienega Creek, is not justified and the risk of water quality degradation remains high. EPA provides further consideration of the five factors, as discussed below:

#### **Factors 1 and 2: Sediment is a critical and under-analyzed water quality parameter**

As ADEQ correctly acknowledges in its Basis for Decision, changes to sediment transport in streams can adversely affect water quality by increasing total suspended sediment in surface water flows and altering the physical integrity of the system, thereby causing problems with scour or aggradation which have the potential to result in water quality degradation.<sup>4</sup> ADEQ also recognizes that potential impacts on surface water quality due to the proposed fill activities could include changes in downstream sediment yield and therefore changes in geomorphology caused by the loss of waters of the U.S.<sup>5</sup> Yet,

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<sup>3</sup> Basis for Decision at pg. 3.

<sup>4</sup> Basis for Decision at pg. 8.

<sup>5</sup> Basis for Decision at pp. 6 and 8.



ADEQ concludes that the proposed fill activities will not have a significant impact on the geomorphology of Barrel and Davidson Canyons.

To draw these conclusions of no significant impact, ADEQ relies on a very limited review of sediment transport effects. ADEQ uses the US Forest Service's (USFS) geomorphic assessment of Barrel Creek by Patterson and Annandale (2012), a 2-day survey using three variables: sediment availability, channel geometry, and water flow. Patterson and Annandale reason that since the Rosemont mine impacts 13% of the entire catchment area, there would not be significant impact to the fluvial geomorphology of the stream system.<sup>6</sup> This conclusion presumes a simple and direct proportionality of the Rosemont mine's sediment contribution to other parts of the watershed, and considers no temporal variability. In reality, the impacts of mining activities on sediment transport are likely to change over time during the active mine life and after closure, with potentially significant consequences to channel stability and aquatic and riparian habitat. Thus, suspended and bedload transport analyses are necessary to evaluate the impacts to OAWs from mine-driven sediment changes.

Without the benefit of these additional analyses, EPA believes that ADEQ would be premature to conclude that there will be little change to lower Davidson Canyon's geomorphology (and water quality) as a result of the fill.

### **Factor 3: Reduction in available assimilative capacity**

According to the FEIS, natural stormwater runoff that currently feeds the OAWs will be diminished up to 40% over the 24.5 – 30 year life of the mine.<sup>7</sup> ADEQ acknowledges a post-closure reduction in runoff volume of 17.2%, and concludes that this reduction could result in a potential loss of assimilative capacity and therefore potential degradation of water quality and/or riparian areas.<sup>8</sup>

For 404 permitting purposes, the Corps of Engineers requested that Rosemont conduct an analysis of indirect impacts from stormwater diversion. Considering the attenuation of impacts as the contributing watershed becomes larger, Rosemont calculated a reduction in average annual volume of stormwater flow in the Davidson Canyon OAW of approximately 8%, resulting in indirect impacts to 2.2 acres of surface waters within the OAWs during Rosemont mine operation.<sup>9</sup> EPA maintains Rosemont's analysis is flawed and the reduction in stormwater flow will adversely affect the entire wetted channel of the OAW. Rosemont did not calculate the indirect impacts to Lower Cienega Creek.

To address predicted reductions in runoff volume, the draft certification proposes that Rosemont develop and implement a surface water mitigation program designed to maintain aquatic and riparian resources at pre-project levels in Davidson Canyon and Lower Cienega Creek. The program shall include measures to offset predicted reductions in surface water flow (17.2% at post-closure), and a proposed schedule for implementation.<sup>10</sup>

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<sup>6</sup> Basis for Decision at pg. 8.

<sup>7</sup> FEIS, Volume 2, Chapter 3, Table 66. Summary of effects

<sup>8</sup> Basis for Decision at pg. 10.

<sup>9</sup> Email from Brian Lindenlaub, Westlands Resources, to Elizabeth Goldmann, EPA dated January 15, 2014.

<sup>10</sup> Basis for Decision at p. 11, Draft 401 Certification, Specific Condition 5.2.1.



EPA appreciates ADEQ's inclusion of this Special Condition. EPA, however, is concerned that there is inadequate detail or certainty about the prospective surface water mitigation program's ability to offset the reduction in available assimilative capacity. For instance, EPA believes that since the 401 certification's coverage extends over the entire active mine period, and since the natural stormwater runoff that currently feeds the OAWs will be diminished up to 40% over the 24.5 – 30 year life of the mine, the mitigation targets should be based on the 40% surface runoff reductions predicted during the life of the mine, as opposed to the 17.2% post-closure reductions estimated by ADEQ.

In addition, the potential strategies described in the draft 401 certification to offset loss (*e.g.*, purchasing, retiring, severing and transferring of water rights) depend on administrative actions that are not certain to occur. Without certainty of measurable water supply and delivery, and corresponding contingencies for failure to secure such water, EPA does not believe these activities may be reasonably relied upon to replace the loss of wet water in the OAWs and prevent their degradation. We therefore recommend that ADEQ have Rosemont submit its surface water mitigation program to ADEQ for approval *prior* to issuance of the 401 water quality certification to ensure that Rosemont has secured enough available "wet" water to maintain aquatic and riparian resources at pre-project levels in Davidson Canyon and Lower Cienega Creek.

#### **Factor 4: Degree of Confidence in various components of any modeling technique utilized**

In its Basis for Decision, ADEQ correctly notes the uncertainty of the USFS models in predicting impacts to downstream waters.<sup>11</sup> ADEQ concludes that based on modeling and observation (*e.g.*, models, Tetra Tech field observations, SRK Consulting review), Lower Davidson Canyon is not hydraulically connected to the regional aquifer that would be impacted by pit dewatering.<sup>12</sup> With regard to Lower Cienega Creek, ADEQ states the potential reduction in perennial stream flow would be driven by the reduction in contribution from both Davidson Canyon and Upper Cienega Creek, but this reduction in surface flows would be minimal.<sup>13</sup>

The EPA believes that the uncertainty associated with available modeling does not support the above conclusions. Uncertainty equates to greater risk, which argues for a more protective or precautionary application of standards.

As previously stated, changes in sediment loading and a reduction in assimilative capacity will adversely affect water quality in Davidson Canyon and Lower Cienega Creek OAWs. In addition, pit dewatering will adversely impact approximately 20 miles of the Upper Cienega Creek OAW. According to the FEIS, the best-fit models show that mine related groundwater drawdown will result in intermittent conditions in Upper Cienega Creek after 150 years. By 150 years after closure, the risk of dry or low-flow conditions occurring in Upper Cienega Creek would increase to 88-283 days per year. Another model estimate shows Cienega Creek becoming intermittent within 50-150 years.<sup>14</sup> As a contributing

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<sup>11</sup> Basis for Decision at p. 11.

<sup>12</sup> Basis for Decision at p. 11.

<sup>13</sup> Basis for Decision at p. 13.

<sup>14</sup> FEIS, Chapter 3, Table 108.



surface water source to Lower Cienega Creek, reductions in flow in Upper Cienega Creek will result in degradation of water quality in downstream OAW receiving waters.

#### **Factor 5: Potential for Cumulative Impacts**

EPA concludes from a careful read of the evaluation of cumulative impacts contained in the Basis for Decision that the scope and magnitude of impacts associated with the proposed Rosemont Copper Project, and the context in which these impacts will occur, have not been adequately presented.<sup>15</sup> The Rosemont mine represents an assemblage of impacts that are additive to the existing trend of declining water availability due to climate change, drought, and other factors. Insufficient information is provided in the draft certification and the Basis for Decision to demonstrate that the implementation of a surface water mitigation program will replace flows being captured or truncated from the proposed mine, either as a stand-alone impact or in the context of cumulative impacts to water quality such as drought and climate change.

#### **Monitoring for sediment and flow changes**

In general, impacts should be avoided wherever practicable prior to contemplating ways they can be minimized or mitigated. In the case of water quality in OAWs, impacts must be avoided by definition. The draft certification proposes corrective action should impacts to geomorphology occur, but it is unclear whether corrective measures can be put in place to prevent the degradation of OAWs should scour or aggradation be detected, or whether these measures can be effective given the potential lag time between detection and implementation of potential remedies.<sup>16</sup>

The USFS will require the Rosemont mine to monitor sediment between the mine and SR83 to identify areas of scour or aggradation (FEIS mitigation measure FS-SR-05), and Rosemont has agreed to share these data with ADEQ. However, these measures are only applicable on USFS lands; the USFS has no authority, obligation, or expertise to determine or enforce compliance with other agencies' laws or regulations.<sup>17</sup> In addition, based on the monitoring locations on USFS lands, it is questionable whether these monitoring measures and sites would capture changes to the beneficial uses associated with water quality standards at downstream OAWs.

EPA also believes Specific Condition 5.2.1 would benefit from a clearer description of the suspension procedures triggered if degradation is detected. Currently, the draft certification's proposed condition 5.2.1 states that ADEQ "may request" suspension of the CWA 404 permit if degradation is detected and require additional mitigation. However, the condition lacks specificity on implementation and timing of the suspension process and remedies, if any, should monitoring show degradation of an OAW. At minimum, adverse changes in water quality detected in OAWs should require immediate suspension of the 401 certification (and thus of the CWA 404 permit).

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<sup>15</sup> Basis for Decision at p. 13.

<sup>16</sup> Basis for Decision at p. 8.

<sup>17</sup> FEIS, Appendix B, Page B-3

## **Other Water Quality Concerns**

A Corps Memorandum dated October 29, 2009 addresses water quality certification as follows, "The state's certification of compliance with applicable effluent limitations and water quality standards will be considered conclusive with respect to water quality considerations, unless the Regional Administrator (RA) of the U.S. Environmental Protection Agency (U.S. EPA) notifies the district engineer of "other water quality aspects" that should be taken into consideration when making a decision on a permit application for an activity that results in a discharge of dredged or fill material into waters of the United States."<sup>18</sup>

EPA first notified the District Engineer of water quality concerns in a letter dated February 13, 2012. If the state's 401 water quality certification is not modified to adequately address the concerns regarding the protection of Davidson Canyon and Cienega Creek, EPA expects to request the District Engineer evaluate these particular water quality issues raised and documented by EPA both for purposes of the Corps public interest review at 33 CFR 320.4(d) and compliance with 40 CFR 230.10(b)(1) in the decision document for the §404 Clean Water Act permit action.

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<sup>18</sup> Memorandum for Major Subordinate Commands and District Commands Subject: Water Quality Certification dated October 29, 2009 at p. 1.